

ART. II. *Definitions of rare or hitherto undescribed Australian Plants, chiefly collected within the boundaries of the Colony of Victoria and examined by DR. FERD. MUELLER.*

IF I venture to lay before the Philosophical Society a series of descriptions, by which a number of plants, but imperfectly known or entirely new to science, are briefly illustrated, I beg to state, that in doing so I am only actuated by a desire of combining my humble acquirements with those of so many superior minds for the purpose of contributing perhaps towards that important object, for which this Society was formed, to diffuse useful knowledge throughout our adopted country, to elucidate its own productions, or to show how much a land, equally favoured by inexhaustible mineral resources, by a serene climate and most fertile soil, may produce, so that we may learn to appreciate those vast treasures, which as yet hidden and undeveloped are dormant in its virgin soil.

In offering some results of my last researches to the Philosophical Society, I endeavour to fulfil those duties which every one of us has seriously taken upon himself in joining this union; although I must confess, that I only answered with hesitation the honourable call of commencing the series of dissertations, which we hereafter may expect before this auditory, and with which so many will adorn the annals of this Society, as I could not conceal from myself how inadequate my powers are for such a task. Only the thoughts, that science does not disdain the smallest gift, that the last links of a long chain of observations are often closed by a most insignificant discovery, which isolated would be unimportant—only those thoughts could induce me to offer out of the botanical treasures of this country some novelties or rarities which rewarded my last explorations.

I shall bring under review chiefly such plants as have enlarged genera, with but a limited number of species, such as

have unfolded new disclosures in the affinity or geography of the vegetable kingdom, or such as have required an altered position in the system of botany, or such again as exhibit medicinal properties like *Vellea*, *Trachycaryon*, *Beyera*, *Eriostemon*, and other *Diosmeæ*; and not to scatter the connected observations I deemed it expedient to annex occasionally, also, notes and descriptions of allied species indigenous to other parts of Australia.

RANUNCULACEÆ.

Myosurus Australis.

Scapi filiform or setaceous, upwards but slightly thickened; petals and sepals very small; fruitspike narrowly terete, somewhat acute, about an inch long; carpels numerous, closely imbricate, rhomboid or almost deltoid, acuminate, at the thickened base slightly spreading; styles very short.

On moist places or in the open plains where rainwater lodges for a considerable time, near the Emu Creek, Hopkins' River, Avoca, Avon, Richardson and Murray, sometimes abundant. It is not little surprising that this genus, of which hitherto only two species, namely: *M. minimus* from Europe and *M. aristatus* from the Cordilleras of Chili have been noticed, should find its representative also in Australia. Our species is closely allied to *M. minimus*; it differs chiefly in the loose extracurved basis of the carpels.

PITTOSPOREÆ.

Marianthus bignoniaceus.

Innovation silky; branches climbing, slightly pubescent, at length smooth; leaves patent, petiolate, out of an almost heart-shaped base ovate, oblong or lanceolate, apiculate, net-veined, above puberulous soon smoothening, beneath slightly hairy, at the margins undulate revolute, as well as on the nerve densely hairy; pedicels axillary single or two, rarely three together, at the base bractolate, of equal or twice the length of the petiole, as well as the calyx pubescent; flowers pendulous; sepals lanceolate, acuminate, four or five times shorter than the cylindrical, somewhat bell-shaped puberulous orange-yellow corolla; anthers yellow; germen villous silky; capsules narrow-elliptical, somewhat compressed, with a longitudinal furrow, biloculate, villous, cells many-seeded.

On shady rivulets, cataracts, and in fissures of the rocks in the Victoria and Serra Range and the Grampians. In South Australia, on the Onkaparinga and in the Lofty Ranges.

This remarkable and beautiful species extends the geographical limits of the genus *Marianthus* to the eastern portion of this continent, and is the only one hitherto known from beyond the boundaries of Western Australia. At the Grampians it is also accompanied with other features of the Swan River flora as *Lepidobolus*, *Lhotzkya*, *Calectasia*, not previously observed towards the east.

DROSERACEÆ.

3. *Drosera angustifolia*.

(Sect. *Arachnopus*)

Stem foliate, simple, decumbent or adscendent; leaves scattered, nearly sessile, long and narrow caudate, above and along the margin glandulously pilose; racemes, either opposite to the leaves or alternating with them, hardly of their length three-ten-flowered, covered with short gland-bearing hairs; segments of the five-parted calyx lanceolate, gradually narrowed upwards, about equal in length with the capsule, and half as long as the whitish petals; styles 3, divided to the base, its divisions filiform, incurved at the top; seeds egg-shaped, clathrate.

On the moist gravelly margins of the Lakes on the Murray River towards Eustone. This is the first extratropical species of this section of *Drosera* with which we are acquainted. It approaches next to *Drosera Finlaysoniana* from CochinChina. But this is only one of the many tropical forms of plants, which, transgressing the torrid zone, advance so far southerly as the Murray desert.

POLYGALEÆ.

4. *Comesperma polygaloides*.

(Sect. *Disepalum*.)

Smooth; leaves approximated, flat, narrow or linear-lanceolate, acutish, glaucous; racemes somewhat dense, purple; pedicels shorter than the flowers; lateral bracteoles about half as long as the intermediate one; lobes of the anterior sepal acutish; carina gibbous at the top, hardly shorter than the wings.

In barren plains at the Avoca, Guichen Bay, and Encounter Bay.

In its characters approaching to *C. æmulum*; in its habit to *C. calymegum*.

VINIFERÆ.

5. *Cissus Australasica*.

Leaves palmate, quinquefoliate; leaflets coriaceous, stalked, smooth, oval-lanceolate, acuminate, towards the top remotely serrate or entire, below glaucous; the paniculate cymes or the tendrils shorter than the opposite leaf or equally long; flowers four-parted.

On the wooded banks of the Broadribb River.

This second Australian species, which forms a high climber, appears to agree best with *Cissus diversifolia* of Candolle, (not Walpers.)

SAPINDACEÆ.

6. *Dodonea procumbens*.

Branches prostrate; twigs hardly angulated; leaves somewhat scabrous, flat, cuneate, grossly three-toothed at the top; pedicels at the summit of the twigs solitary or rarely two or three together, shorter than the leaves, as well as the calyx hirtellous; flowers dioecious, pentamerous, with a long style; capsule with three broad rounded wings.

In subsaline flats and peaty places at the foot of Mount Sturgeon and Mount Abrupt.

This *Dodonaea* is with facility recognised by its procumbent growth, and the extremely long style which generally measures one inch.

7. *Dodonæa deflexa*.

Upright, somewhat scabrous, viscose; twigs angulated, patent; leaves coriaceous, nearly round or ovate, repand and undulate at the margin, and sometimes remotely toothed, truncate or rounded at the top; flowers dioecious, axillary, solitary or geminate; pedicels deflexed, shorter than the leaves; sepals ovate, nearly round; capsule truncate, with four or five wings, which are expanded upwards.

In the desert scrub along the Murray River and Spencer's Gulf.

8. *Dodonæa bursarifolia*.

Smooth, not viscous; twigs indistinctly angulated; leaves coriaceous, nearly opaque, flat, obovate, cuneate, blunt, rarely apiculate or emarginate, always entire; flowers dioecious, axillary, and terminal, solitary, or two and three together; sepals, oblong-linear; anthers whitish; capsule three or four sided, with extremely narrow wings; seeds shining black.

In the barren scrub-country on the Murray and St. Vincent Gulf.

This species agrees in many points with *Dod. trigona* and *Dod. aptera*.

ZYGOPHYLLÆ.

9. *Tribulus acanthococcus*.

Prostrate; leaves longer than the peduncles, with generally five or six pairs of leaflets, which are oblique, ovate-lanceolate, approximate and in size almost equal to each other, subsessile, beneath appressed hairy; flowers decandrous; petals obovate, exceeding somewhat in length the narrow-oblong sepals; anthers ovate; rays of the stigma reflexed, half as long as the thick style; fruit depressed, consisting of 5 puberulous, tri-seeded carpels, which are in the middle bispinose, on the back crested and hairy, at the commissure lacunose, and are destitute of a wing.

On the sandy, loamy, arid plains along the Murray and Murrumbidgee, towards their junction.

Only one Australian species has been previously described from this genus, *T. Hytrix*, R. Br. in Sturt's exp. into Centr. Aust., II, app. p. 69 (*T. lanatus*, Walp. annal. II, 243,) for the discovery of which we are indebted to the enterprising Captain Sturt.

DIOSMÆ.

Asterolasia.

A new genus of Diosmæ. Flowers hermaphrodite, solitary sessile. Sepals 5, petaloid. Petals 5, membranous, diminutive or wanting. Stamens 10, hardly exceeding the length of the calyx. Filaments alternately shorter. Anthers erect, inapp pendiculate, fixed at the base, bilocular, cells bursting longitudinally. Style simple. Stigma deeply five-cleft, with filiform or clavate lobes. Germina five, concrete, with two gemmulæ, affixed to the central angle. Carpels five, tomentose, one-seeded. Seeds, strophialate. Australian shrubs, resembling *Phebalium* species, covered with stellate hair, in allusion to which the generic name has been formed.

This splendid genus is exactly intermediate between *Chorilæna* and *Geleznovia*. It differs from the former in its inflorescence, smooth filaments, basifixed anthers, and smallness or absence of petals. Through the last character it approaches to *Geleznovia*; but the stigma of the latter is undivided orbicular; and this character is supported by a habitus extremely alienate.

Two species have been hitherto discovered.

10. *Asterolasia phebaloides*.

Branched; leaves sessile, oblong or obcordate-cuneate, retuse, on both sides tomentose, with flat margins; sepals golden-yellow, excelling twice or three times the length of the carpidia; petals wanting; lobes of the stigma filiform, only a little shorter than the hairy style; seeds opaque.

On the stony declivities of the Grampians, the Serra and Victoria Ranges, particularly frequent on Mount Sturgeon and Mount Abrupt.

11. *Asterolasia trymaloides*.

Much branched; leaves coriaceous, ovate, on short petioles, above glabrescent, beneath tomentose, with revolute margins; sepals of equal length with the carpidia, twice or three times longer than the petals; lobes of the stigma clavate, much shorter than the smooth style; seeds shining.

On the rocky summit of the Cobboros mountains in the Australian Alps, at an elevation of more than 6000 feet above the level of the sea.

Here, at so apt an opportunity, I adjoin the diagnosis of a second and very remarkable species of *Chorilæna*, occurring in the interior of New South Wales.

12. *Chorilæna angustifolia*.

Leaves as well as the branches covered with stellate hair, approximate, oblong-linear, blunt, on short petioles, with revolute margins, at length glabrescent, scabrous; corymbs capitate-terminal; bracteoles linear-filiform; sepals broad-linear, half as long as the corolla, externally somewhat hairy, connate at the base; filaments smooth, surpassing in length the narrow-lanceolate petals; style smooth; stigma punctiform; germina five distinct, narrow, perburulous.

13. *Eriostemon hillebrandii*.

Diffuse or upright; leaves oblong, ovate or heart shaped, truncate or short bilobed at the top, with recurved serrate or entire margin, on both sides smooth or somewhat scabrous on the surface; corymbs terminal; sepals minute, deltoideo-ovate; filaments of subequal length with the petals, as well as the style smooth; anthers inappendiculate; carpels obliquely ovate rostellate; seeds even and somewhat shining.

A, *brevifolius*, diffuse, leaves ovate or cordate, 2-4" long, imperfectly toothed or with entire margin.

On the rocky banks of rivulets in the Victoria Ranges.

B, *longifolius*, strictly upright, leaves oblong serrate, upwards of an inch long.

On the rocky summit of Mount William, 5,000 feet above the level of the sea.

This highly ornamental plant forms a connecting link between *Phebalium* and *Eriostemon*, and has been described by Dr. Lindley as a species of the former genus (under the name of *Phebalium bilobum*) in Sir T. Mitchell's third expedition, vol II., p. 178.

It might be almost considered as a genus distinct of both; and South Australian specimens have been under these considerations distributed with the name of *Hillebrandia Australasica*.

14. *Crowea exalata*.

Much branched, upright or diffuse; twigs indistinctly angulate, wingless, puberulous; leaves alternate or fasciculate, broad-linear, gradually towards the basis narrower, blunt, minutely apiculate, with recurved margins; pedicels of sub-equal length with the calyx, solitary; petals rose-red.

On the rocky tops of Mount M'Farlane, about 5,000 feet above the sea; on the gravelly banks of the Mitta Mitta and Livingstone River towards Lake Omeo, and on the Boggy Creek in Gipps' Land.

Easily to be distinguished from *Crowea saligna*, by thicker much smaller leaves, which are not gradually narrowed at the top, by wingless twigs and smaller flowers.

15. *Boronia coerulescens*.

Suffruticose; stems upright, branched, terete; leaves thick, sessile, oblong linear, obtuse, channelled, beneath glandulose-tuberculate; pedicels axillary and terminal, solitary, thickened at the apex, sub-equal in length to the leaves; flowers octandrous; sepals oblong or lanceolate, of less than half the length of the bluish petals; filaments ciliate; seeds reticulate-venose.

A, *glabrescens*: branches, leaves and pedicels smoothish, scabrous; flowers smaller, with acute lanceolate sepals.

In barren places from the Mallee scrub on the Murray River to Spencer's Gulf.

B, *pubescens*: branches, leaves and pedicels short-pubescent; flowers larger; sepals oblong, obtuse.

On rocky hills in the Grampians, and in the desert towards Guichen Bay.

16. *Boronia veronicea*.

(*Zieria veronicea* Ferd. Mueller, Coll.)

Covered with a velvet-like indument; leaves approximate,

simple, ovate or subcordate, blunt sessile, with revolute margin; flowers tetrandrous, axillary, solitary, on short pedicels, forming at the end of the branches a foliate raceme; sepals acute lanceolate, half as long as the corolla; filaments hispidulous; carpels elliptico-oblong, compressed, pubescent.

On sandy places about Encounter Bay and in Kangaroo Island.

By this interesting species the genus *Zieria* becomes united with *Boronia*, to which I am also inclined to refer *Cyanothamnus*.

17. *Boronia clavellifolia*.

Fruticose, diffuse, much branched, smooth; branches tuberculate; leaflets small, ternate, short-stalked, sub-clavate, terete, blunt; flowers axillary and terminal, solitary, geminate or ternate, octandrous; pedicels shorter than the flower; sepals ovate-triangular, ciliolate, less than half as long as the corolla; filaments smooth, glandulose.

On sandy, loamy plains in the scrub near Lake Lalbert and towards the mouth of the Murray River.

MALVACEAE.

18. *Sida intricata*.

Fruticulose, upright or diffuse, much branched; leaves small, ovate-roundish, truncate at the top, toothed, but entire at the cuneate base, above scantily, beneath densely covered with grey stellate hair, petioles much shorter than the leaves, surpassing in length often the subulate-setaceous stipules, peduncles axillary, solitary, drooping, shorter than the leaves; segments of the calyx subdeltoid; carpels five, a little depressed, on the back almost even and puberulous, at the commissura netted; seeds brown, puberulous.

In sandy, loamy plains between Mount Hope and the Murray, also towards the Darling River.

It bears some affinity to *Sida corrugata*, but its growth is upright intricate, it is much more robust, the flowers and leaves and capsules are much smaller, the latter not rough.

19. *Sida humillima*.

Suffruticose, procumbent; leaves thin, ovate-oblong, obtuse, cordate or rounded at the base, unequally and deeply crenate, above scantily, beneath densely covered with a stellate somewhat shining indument; petioles hardly of the length of the leaves, but longer than the subulate-linear stipules; peduncles axillary, solitary or two or three together, filiform, towards the middle articulated, sub-equal to the length of the petiole;

segment of the calyx subteltoid, acute; carpels, eight-ten, depressed, rough, smooth at the commissura asperous; seeds brown, smooth.

In dry plains on the Avoca and Murray.

In South Australia, on St. Vincent Gulf and the Kapunda.

Not dissimilar to *Sida corrugata*.

20. *Abutilon Behrianum*.

Stem herbaceous, upright, hardly branched, as well as the leaves covered with a velvetlike toment; leaves cordate, acuminate, repand or slightly crenate, about as long as the petiol; stipules linear-subulate deciduous; peduncles axillary, solitary, one-flowered or terminal with several flowers, above the middle articulated, often shorter than the petiol; segments of the calyx ovate-lanceolate acute; carpels 9-12, tomentose-pubescent, compressed, oblique-ovate, aristate, with 2-4 black somewhat scabrous seeds.

In lagoons which become dry, and on the margins of lakes on the Murray, Loddon, Darling, and Murrumbidgee.

21. *Abutilon otocarpum*.

Fruticose, upright, all over grey-velutinous; leaves cordate-orbiculate, blunt, inequally crenate, of nearly equal length with the petiol; stipules linear-subulate, deciduous; peduncles axillary, solitary, one-flowered, towards the top articulate, but little surpassing the length of the petioles; segments of the calyx inflated, cymbiform, long acuminate; carpels numerous, shorter than the calyx, very compressed, earshaped, nearly membranaceous, velutino-pubescent, with one to three black glabrous rough seeds.

Very rare on Sandhills on the Murray towards the junction of the Darling.

This *Abutilon* stands in some relation to *Ab. halophilum* (Ferd Mueller in *Linnæa* xxv., p. 381) from Spencer's Gulf.

SCLERANTHÆ.

23. *Mniarum singuliflorum*.

(*Scleranthus mniaroides* Ferd. Mueller collect.)

Stems caespitose, somewhat flaccid; leaves upright or little patent, as well as the branches smooth, lævigata; peduncles one-flowered, at the top bibracteate; calyx turgid, 5-cleft.

On bare rocks at the summit of the Cobboras mountains, 6,000 feet above the level of the sea. Easily to be distinguished by the above notes from *Mniarum biflorum* (M.

fasciculatum R. Br. *Scleranthus Mniarum* Ferd. Mueller), the only known species, and like this varying in the length of the peduncles. By the constantly 5-cleft calyx of this kind *Mniarum* becomes so closely allied to *Scleranthus*, that hardly any objection can be raised against the conjunction of the two genera.

PORTULACEÆ.

22. *Mollugo Novo-Hollandica*.

Stems numerous, prostrate, dichotomous; leaves pseudo-verticillate, unequal, spathulate-lanceolate, at the top indistinctly serrulate, finally grabrescent, young ones together with the branches woolly-pubescent; flowers triandrous, pseudo-verticillate; sepals blunt, a little longer than the ovate capsule, and about equal in length to the pedicel; seeds reniform-ovate, shining brown, densely seriato-granulate.

On the sandy sometimes inundated banks of the Murray.

This presents the first Australian species of this genus, and must be systematically placed next to *Moll. hirta* from the Cape of Good Hope.

EUPHORBIACEÆ.

24. *Phyllanthus trachyspermus*.

Annual, smooth, glaucous; stem upright, branched; branches angular; leaves imbricate, deciduous, oblong, obtuse, on very short petiols; pedicels solitary, very short; sepals lanceolate-acute, much shorter than the capsule, with broad membranaceous margin; stigmata very small; capsula subglobose, smooth, drawn out into an umbonate apex; seeds large, livid, acut, triangular, at the internal angul deeply excavate, on the sides and back rugosely asperate.

On places subject to inundations at the junction of the rivers Darling and Murray.

25. *Phyllanthus lacunarius*.

Annual, smooth, glaucous; stem upright, branched; branches angular; leaves imbricate, deciduous, obovate- or cuneate-oblong, obtuse, on short petiols; flowers monoecious, axillar, solitary, on short pedicels; sepals minute, subovate, obtuse, with broad membranaceous margin; stigmata very short; capsule depressed, trigastrous; seeds trigonal, blackish with longitudinal streaks.

On the margins of lagoons which become dry during summer, at the junction of the Murray and Darling rivers.

26. *Phyllanthus Fuernrohrü.*

Fruticulose, upright, branched, with a grey velvet-like indument; branches nearly terete; leaves imbricate, deciduous, spathulate-obovate, on very short petiols, apiculate; pedicels axillar, subsolitary, half the length of the leaves; sepals lanceolate-ovate, acutish, with membranaceous margin, outside as well as the depressed capsule hairy scabrous; seeds brown, lævigata.

On gravelly sandhills near the Murray, rare.

This species received its name in grateful acknowledgment of much kindness, which the author experienced from Professor Fuernrohr, in Ratisbon.

27. *Trachycaryon Klotzschii.*

Leaves opposite, very short stalked, ovate-lanceolate, acute, irregularly crenately toothed, serrate or repand, above smooth or imperfectly puberulous, beneath grey-velutinous, at the base of the petiole on both sides furnished with one or two small stipitate glands; femal flowers apetalous; sepals ovate, subacuminate; styles free, hardly to the middle bifid; capsuls verruculose, ovate-globose, slightly impressed at the suturas; seeds grey, ovate, shining.

On sandhills near Corner Inlet, and in various localities in South Australia.

28. *Trachycaryon Cunninghami.*

Leaves alternate, in circumference lanceolate-ovate or heartshaped, short- or deep-tripid, smooth or below tomentose, irregularly and coarsely serrate, at the base truncate or rounded, with acute lobes and teeth, on the base of the petiole furnished on both sides with one or two large stipitate glands; femal flowers apetalous; sepals lanceolate, acuminate; styles free, deeply bifid; capsuls subglobose, not furrowed at the suturas; seeds spotted.

A, TOMENTOSUM;

Leaves short-stalked, below as well as the twigs and capsuls tomentose; bracts and sepals ciliate.

B, GLABRUM;

Leaves long-stalked, as well as the capsuls sepals and bracts smooth.

Between granite rocks and on the sandy banks of the Snowy River.

To variety A belongs probably *Adriana acerifolia* of Allan Cunningham, and to B, *A. heterophylla* of Sir William Hooker.

29. *Trachycaryon Hookeri*.

Leaves alternate, long-petiolate, lanceolate-oblong, gradually narrowed into the base, acute or obtuse, smooth or grey velutinous, irregularly crenate-tooth or bluntly lobed, at the base of the petiole on both sides beset with a small gland; femal flowers apetalous; sepals ovate-lanceolate, acut; styles at the base connate, deeply bifid; capsule trigas-trous, glabrescent.

A, velutinum;

Leaves above thinly, below together with twigs and flowers thicker velutinous.

B, glabriusculum;

Leaves on both sides smooth, twigs and flowers glabrescent.

On sandridges along the Murray, towards the junction of the Darling and the Murrumbidgee.

30. *Beyeria opaca*.

Smooth; twigs compressed, yellowish-green; leave narrowly or linear-oblong, rounded-blunt, gradually narrowed into the base, hardly viscous or shining, with flat or slightly recurved margins, above light-beneath pale-green; pedicels of subequal length with the calyx; capsuls ovate-globose, hardly furrowed at the suturas; seeds shining, variegated, with a thick caruncula.

In the Mallee scrub, between Lake Lalbert, Lake Tyrrell, and the Murray River.

MYRTACEÆ.

31. *Lhotzkya genethylloides*.

Flowers terminal, nearly capitate; leaves crowded, exstipulate, spreading, petiolate, without stipules, tetragonal, at length above flattening, subobtuse, as well as the twigs and the tube of the calyx hirtellous; bracteols shorter than the pentagonal tube of the calyx, connate to the middle and apiculate by the excurving carina.

In rocky arid declivities of the Grampians, the Serra, and Victoria Ranges.

B, glabra;

Dwarf, leaves almost smooth.

On the subalpine summit of Mount William.

I do not hesitate to refer to this species *Genethyllis alpestris*, of Lindley, (in Mitchell, Three Expeditions, vol. ii., p. 178,) described from specimens, collected by Sir Thomas Mitchell on Mount William. These specimens, transmitted to Professor

Lindley, were probably not well developed, being gathered in the month of June. Examining the plant last year in the month of November, I became convinced that it belongs to the genus *Lhotzkya*. I have neither retained the specific name *alpestris*, as the plant occurs most abundantly on the lower parts of those mountains, and in localities much exposed to the hot north-westerly winds.

CUCURBITACEÆ.

Cucurbita micrantha.

Stems prostrate, angulose, simple, as well as the petioles strigosely asperous; leaves subcordate, with 5 short blunt dentato-sinuate or incised lobes, on both sides hirtello-asperous, on the margin and beneath along the nerves densely strigulose; tendrils short undivided; peduncles axillar, filiform, fasciculate, much shorter than the petiole, with the calyx pubescent; flowers monoecious; berries globose, even, smooth, manyseeded.

On the sandy-loamy banks of the Murray, sometimes washed by the floods.

The fruit might, on account of its intense bitterness, perhaps be substituted for colocynth.

GENTIANÆ.

Limnanthemum crenatum.

Leaves cordate-orbulate, crenate, obsoletely palmatinerved, above even, beneath densely glandulose; segments of the calyx narrow-lanceolate, less than half as long as the corolla, exceeding but little the length of the capsule; segments of the yellow corolla on the margin and orifice fimbriate, inside longitudinally broad-cristate; style thick, abbreviate; stigma with five lacerate wings; hypogynous glands fimbriate; capsule polyspermous; seeds ovate, laevigate, hardly keeled.

In tranquil bends of the Murray river, Murrumbidgee, and Mitta Mitta, and in the nearest lakes and lagoons.

A most handsome, and, with regard to its crenate leaves and the structure of the stigma, equally singular species.

GOODENIACEÆ.

Vellea, R. Brown.Sect. *Aceratia*.

Calyx five-parted. Corolla violaceous, hardly gibbose, with wingless underlip and half-winged upperlip.

34. *Velleya connata*.

High, glaucous, smooth; stem upright, dichotomous, with bearded axils; leaves all radical, elongate-lanceolate, one nerved, entire, contracted in a petiole of equal length; bracts very large, almost deltoid, acute, half concrete, entire; segments of the calyx lanceolate and ovate, acuminate; style villose; seeds densely punctuate, surrounded by a broad wing.

On scrubby sandhills towards the junction of the Murray and Murrumbidgee.

This highly curious plant also possesses the tonic bitterness which I discovered in numerous species of Goodeniaceæ.

SOLANACEÆ.

35. *Solanum lacunarium*.

Armed all over with setaceous-subulate straight prickles; stem dwarf, suffruticose, branched; leaves petiolate, in circumference oblong-ovate, sinuate-pinnatifid, above conspersed with stellate hair, at length calycescent; beneath as well as the branches covered with a thin grey toment; lobes of the leaves oblong, rounded-blunt, with entire margin; peduncles terminal, 2-6-flowered, acelate; segments of the calyx acutish, deltoid-lanceolate; anthers yellow.

In lagoons which are dry during the summer season near the junction of the river Darling and Murray.

It differs from *Solanum cinereum* (R. Br. prodr. i., 446), the only one to which it bears similarity, in its blunt entire leaf-lobes, which are together with flowers and berries considerably smaller, by almost considerably armed peduncles and pedicels, and by hardly cuspidate segments of the calyx.

36. *Solanum pulchellum*.

Unarmed; stems procumbent, suffruticose; leaves on somewhat long petiols, ovate-or-narrow-oblong, blunt, repand, entire, above pale green, laxely tomentellous, below clothed with a shineless, thin, grey toment; peduncles 2-5-flowered, generally surpassing the length of the petiole; calyx half as long as the corolla, carinulate, with triangular acuminate segments; anthers yellow, slightly attenuat, surpassed in length by the style.

Along the Wimmera, Avoca and Murray rivers; thence through the desert-country as far as Lake Torrens, Spencer's and St. Vincent gulfs.

Allied to *Solanum dianthrophorum* (Dunal Sol. 183) and to an undescribed species discovered in Central Australia by Capt. Sturt, of which I subjoin the definition :

37. *Solanum Sturtianum*.

Stem upright, fruticose, scantily armed with short acicular prickles ; leaves on somewhat long petioles, lanceolate-oblong, blunt, entire, unarmed, above glabrescent, beneath clothed with a very thin toment ; peduncles 3-5-flowered, generally surpassing the length of the petiole ; calx much shorter than the corolla, with triangular, acute teeth ; anthers yellow, attenuate.

Another species brought from the interior of this island-continent by the same intrepid traveller, might be characterized as follows,—

38. *Solanum oligacanthum*.

Stem upright, fruticose ; branches beset with distantly scattered setaceo-subulate prickles ; leaves small, cordate, obtuse, entire. on both sides as well as the branches covered with a very thin grey toment, hardly armed, short-stalked ; peduncles 2-or many-flowered, short ; calyx half as long as the corolla, with deltoid acute segments ; anthers yellow, excelled in length by the style.

This series approaches to *Solanum orbiculare* (Dunal syn. 27), from which it differs chiefly in its not shining toment, and its exact heartshaped somewhat larger leaves.

To complete my additions to the elaborate description of more than 900 *Solanum* species, published by Prof. Dunal in the 13 vol. of Candolle's prodromus, I beg to add yet the diagnosis of an unknown South Australian species, having also given since an account of three others in Prof. Schlechtendal's *Linnaea* (vol. xxv. p. 432-434).

39. *Solanum simile*.

Unarmed, smooth ; stem upright, suffruticose ; leaves narrow-lanceolate, elongate, entire or lobed at the base, thin-venose ; corymbs lateral, few-flowered, simple or divided ; segments of the half five-parted calyx rounded, apiculate ; berries globose, nodding.

On less fertile plains on the Murray and Angas river, on Spencer's and St. Vincent gulfs, and in Kangaroo Island.

It is distinct from *Solanum laciniatum* in its constantly

low stem, smallness of all parts, its never pinnatifid leaves, its shorter nodding pedicels, and smaller always spherical berries.

I conclude these contributions towards the Australian Solanæ with the remark, that this order received by the first and ever memorable expedition of the unfortunate Dr. Leichhardt the addition of the genus *Datura* (in *Datura Leichhardtii*), and by the researches of Dr. Behr the additional genus *Lycium* (in *L. Australe*), both unnoticed not only in the golden prodromus of R. Brown, but also in Dunal's monographia published in 1852.

LOGANIACEÆ.

40. *Mitrasacme distylis*.

(Sect. *Lysigyne*.)

Annual, minute, glabrous; stem upright, simple or a little branched, smooth; leaves oblong-linear, somewhat carnulent; pedicels axillar and terminal, setaceous, solitary, rarely two or three together, at least twice as long as the leaves; calyx bellshaped, very short bilobed, not excelled in length by the corolla; styles separated; capsule inclosed; seeds not-veined.

Around swamps near Mount William. In stature resembling *Mitrasacme paradoxa*, but from this as well as all the other species widely different in its disjoint styles.

BORRAGINEÆ.

41. *Heliotropium lacunarium*.

Stems herbaceous, upright or procumbent, appressed-hairy; leaves somewhat long petiolate, oblong-or lanceolate-ovate, nearly blunt, entire, not rugose, on both sides scabrous, beneath along the margin and nerve pilose; spikes ternate geminate or solitary ebracteate; segments of the calyx subequal to each other, of the length of the corolla-tube; caryopsides subovate, rugose, glabrous.

Around the lagoons, and in low localities on the Murray.

SCROPHULARINÆ.

42. *Anthocercis myosotidea*.

All over hirtellous from short gland-bearing hairs; leaves small, sessile, ovate, blunt, broader towards the base, unequally revolute; pedicels shorter than the hirtellous calyx;

segments of the calyx semiovate, blunt, twice shorter than the tube; corolla half-exserted, with short blunt lobes.

In gravelly sandridges on the Murray, but only rare.

A species next to *A. scabrella*, but well marked by the short blunt corolla.

43. *Anthocercis angustifolia*.

All over glandulously pubescent; leaves linear, flat, entire; pedicels of equal length to the calyx; segments of the calyx linear, acutish; laciniae of the large corolla lanceolate-linear, acuminate, nearly twice as long as the tube.

In stony glens near Mount Lofty in South Australia, not frequent.

PROTEACEÆ.

44. *Grevillea dimorpha*.

(Sect. *Calothyrsus*.)

Diffuse; branches angulate; leaves coriaceous, undivided, long-lanceolate or linear, acute, callously mucronate, almost sessile, trinerved, above smooth, on the recurved margins and the lateral nerves somewhat scabrous, beneath grey-silky; racems fascicular on very short peduncles; calyx almost three times longer than the pedicels, outside rutilous-silky, inside at the middle white bearded; style long exserted, together with the germen and its stripes perfectly smooth; stigma lateral, ovate centrally umbonate.

A. latifolia,

leaves ovate- or narrow-lanceolate, 2-4" long, 4-8" broad, rarely broad.

B. angustifolia,

leave elongate-linear, 2-4" rarely 6" long, 1-1½" broad.

In the Grampians, Serra, and Victoria ranges on barren rocky places.

This splendid species bears much affinity to *Grevillea Victoriæ*; it is however readily distinguished by its thicker subsessile generally narrower leaves with a distinct marginal scabrous nerve, by its short racemes on an abbreviate peduncle with rusty brown rhachis, by its smaller flowers inside nearly up to the limbus barbate, and finally by smaller folliculs tapering into a longer stripes.

It flowers in the spring, not as *Grevillea Victoriæ* in the autumn.

45. *Grevillea confertifolia*.(Sect. *Lissostylis*.)

Diffuse; twigs pubescent; leaves crowded, linear-subulate, even, short-mucronate, above smooth, beneath with the innovations silky; margin refract to the on both sides prominent middle-nerve; fascicles of flowers sessile, terminal, concealed by the leaves; calyx outsides and its pedicel grey silky, inside at the middle densely bearded; pistil hardly half an inch long, smooth, exserted; germen stipitate; stigma ovate, oblique-terminal, with central papilla.

On the subalpine summit of Mount William, and on rocky ridges towards Mount Zero.

This species resembles *Grevillea juriperina* and *G. reparia* (R. Br. prod. 377.)

46. *Grevillea lobata*.(Sect. *Eugrevillea*.)

High, upright, many branched; twigs spreading, angular, covered with a very thin whitish indument; leaves in circumference ovate, deeply lacinate, venose, with hardly recurved margin, contracted by a wedge-shaped basis into the stalk, above pale-green, glabrescent, beneath tomentose as the branches; segments two or three on both sides, distant, lanceolate, mucronate, entire, rarely teeth-bearing; racemes dense, ovate, many-flowered, at length drooping; calyx outside as well as pedicels and rhachis grey from an appressed indument, inside smooth; style long exserted, with exception of the basis smooth; hypogyne gland very short; stigma oblique-lateral, broad-ovate, centrally umbonate; germen and its stipes white-tomentellous.

In the desert along the Murray river, from Swan Hill away to the westward.

Nearest to *Grevillea ilicifolia* (R. Br. suppl. p. 21), but much higher, upright, tomentum white shineless, not silky, leaves deeper, divided with distant segments, and flowers more numerous.

47. *Grevillea pterosperma*.(Sect. *Cycloptera*.)

Upright; branches strict, holosericeous; leaves glaucous, somewhat rigid, narrow-linear elongate, undivided or bitripid, glabrescent, ending in a sphacelate, mucrone above

convex and manifestly striated; margin refract to the beneath very prominent middle nerve; racemes alternately crowded at the end of the branches, elongate, dense-flowered, calyx outside with pedicels and rhachis grey pubescent, inside together with the style smooth; germen stipitate, tomentose; stigma ovate, oblique-terminal centrally umbonate; folliculi globose-ovate, turgid, hardening with a short stipes, grey tomentellous; seeds flat, ovate, even, all-around winged with a thin membrane.

In the Mallee scrub on sandhills towards the junction of the Murray and Murrumbidgee.

Allied to several tropical species, particularly to *G. augustata* (R. Br. suppl. p. 24).

POLYGONÆ.

48. *Polygonum dictinum*.

(*Sect. Avicularia.*)

Suffruticose, glaucous perfectly smooth; stems upright, many branched; leaves linear, at both ends narrowed; stipules short, binerved, entire smooth, laxely clasping; fascicles axillary, few-flowered; flowers dioecious, octrandrous and trigynous, greenish, imbricate-bracteolate, cernuous; pedicels shorter than the 5-parted glandless calyx; caryopsis subglobular-trigone, shining black, hardly rugulose.

On shifting sandhills at the junction of the Murray and Murrumbidgee, and rarely at the Mitta Mitta.

SANTALACEÆ.

49. *Choretrum chrysanthum*.

Branches terete; twigs angular, not pungent; leaves almost persistent, lanceolate-subulate, at length somewhat deltoid; glomeruls yellow, 2-5-flowered, on the top of lateral very short twigs; bracteols 3 subovate or roundish, ciliolate.

On low scrubby ridges along the Avoca and Murray river.

Not dissimilar to *Choretrum glomeratum*, from which as well as the few other already known species it is easily distinguished by its golden flowers.

ERIOCAULONEÆ.

Electrosperma.

A new genus of Eriocauloneæ. Flowers in androgynous heads, all furnished with a bracteola. Receptacle conical,

as well as the bracteolae smooth. Male flowers central pedicellate. Sepals smooth, the three externals coherent at the base; the three internals concert in a long tube, the free lobes bearing a gland. Stamens six inserted to the limbus. Anthers bilocular, introrse. Female flowers marginal on short pedicels, destitute of a calyx. Style, one, short, with three filiform stigmata. Capsule smooth, tricoccous, loculicide dehiscent. Seeds in the cells solitary, smooth, not costulate, of the structure of *Eriocaulon*.

This genus is chiefly characterised by the want of the floral envelope in the female flowers, but agrees otherwise in habit and structure with *Eriocaulon*. The name is derived from the colour and shining transparency of the seeds, not unlike that of amber.

50. *Electrosperma Australasicum*.

On wet places along the Murray, towards the junction of the Murrumbidgee.

A small annual scapebearing herb. Leaves grass-like, fenestrate nerved, pellucid. Scape monocephalous, vaginat at the base.

ART. III.—*On the comparative value and durability of the Building Materials in use in Melbourne. By Robert Brough Smyth.*

THE selection of building materials has always been a work of difficulty, as indeed is every branch of knowledge, where the experience of a single individual is substituted for those simple principles which arise naturally from an accumulation of facts,—not the records of one life time, but of many,—not of one department of science, but of all. The mistakes that have been made from time to time, as evidenced in the decay of some of the finest architectural works in Europe, have drawn considerable attention to the subject of late years; and that such mistakes may, in a great measure, be provided against, if not wholly prevented, we have the evidence of the Scientific Commission appointed to examine the stone to be used in the New Houses of Parliament, and of the Corps of Royal Engineers, whose sound and practical observations, founded on actual experiments, are worthy of the highest consideration.

It not only has immediate reference to the conservation of those edifices wherein the genius of the architect is para-